

**System Operations Subcommittee**  
**PJM Operations Summary**  
**September 2017 Operations – Final**

**There were 35 PCLLRWs and 5 High System Voltage events in September**  
**There was 1 DCS reportable event in September**

**CPS1: 141.56%      BAAL: 99.81%<sup>1</sup>      CPS2: 87.43%**

<sup>1</sup>PJM directly measures the total number of BAAL excursions in minutes compared to the total number of minutes within a month with a target value for this performance goal at 99% on a daily and monthly basis. NERC rules limit the recovery period to no more than 30 minutes for a single event.

**DCS** (1 Event)

09.07.2017 9:14:21	09.07.2017 9:23:01	Loss of Zimmer 1 (1007 MW)  ACE Recovery Duration" 00:08:40
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**Spinning** (3 Events)

09.04.2017 20:03	09.04.2017 20:18	Peak load was higher than anticipated.  Tier 1 Estimate(MW)- 465.70 Tier 1 Total Resource Response (MW)-63.2 Tier 2 Total Resource Response(MW)-567.3
09.07.2017 09:16	09.07.2017 09:25	Zimmer 1 loaded at 1300mw tripped  Tier 1 Estimate(MW)- 1569.80 Tier 1 Total Resource Response (MW)-1237.2 Tier 2 Total Resource Response(MW)-Not determined due to the duration being under 10 minutes
09.21.2017 14:15	09.21.2017 14:31	Low ACE due to bottled generation  Tier 1 Estimate(MW)- 306.30 Tier 1 Total Resource Response (MW)-215.74 Tier 2 Total Resource Response(MW)-878

**High System Voltage Action** (5 Events)

09.02.2017 00:43	09.02.2017 10:50	A High System Voltage has been issued; all companies shall take the following actions on the Bulk Electric System: 1. All switchable capacitors are out of service. 2. All reactors are in service. 3. TOs are requested to review and adjust LTC settings as
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		<p>appropriate. All LTC (230 kV and above) and voltage schedule adjustments shall be coordinated with PJM Dispatch.</p> <ol style="list-style-type: none"> <li>4. All SVCs are absorbing reactive power.</li> <li>5. Generation Owners shall operate generators at the lower bandwidth of their voltage schedule when possible.</li> <li>6. Generation Owners shall communicate with PJM and the TO restrictions to their generator's ability to absorb MVARs if that capability varies from the existing "D" curve.</li> </ol> <p>Target: Distribution Companies/Transmission Owners/Generation</p>
09.02.2017 23:45	09.03.2017 10:40	<p>A High System Voltage has been issued; all companies shall take the following actions on the Bulk Electric System:</p> <ol style="list-style-type: none"> <li>1. All switchable capacitors are out of service.</li> <li>2. All reactors are in service.</li> <li>3. TOs are requested to review and adjust LTC settings as appropriate. All LTC (230 kV and above) and voltage schedule adjustments shall be coordinated with PJM Dispatch.</li> <li>4. All SVCs are absorbing reactive power.</li> <li>5. Generation Owners shall operate generators at the lower bandwidth of their voltage schedule when possible.</li> <li>6. Generation Owners shall communicate with PJM and the TO restrictions to their generator's ability to absorb MVARs if that capability varies from the existing "D" curve.</li> </ol> <p>Target: Distribution Companies/Transmission Owners/Generation</p>
09.04.2017 01:27	09.04.2017 09:06	<p>A High System Voltage has been issued; all companies shall take the following actions on the Bulk Electric System:</p> <ol style="list-style-type: none"> <li>1. All switchable capacitors are out of service.</li> <li>2. All reactors are in service.</li> <li>3. TOs are requested to review and adjust LTC settings as appropriate. All LTC (230 kV and above) and voltage schedule adjustments shall be coordinated with PJM Dispatch.</li> <li>4. All SVCs are absorbing reactive power.</li> <li>5. Generation Owners shall operate generators at the lower bandwidth of their voltage schedule when possible.</li> <li>6. Generation Owners shall communicate with PJM and the TO restrictions to their generator's ability to absorb MVARs if that capability varies from the existing "D" curve.</li> </ol> <p>Target: Distribution Companies/Transmission Owners/Generation</p>
09.09.2017	09.09.2017	<p>A High System Voltage has been issued; all companies shall take the</p>

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00:55	09:00	<p>following actions on the Bulk Electric System:</p> <ol style="list-style-type: none"> <li>1. All switchable capacitors are out of service.</li> <li>2. All reactors are in service.</li> <li>3. TOs are requested to review and adjust LTC settings as appropriate. All LTC (230 kV and above) and voltage schedule adjustments shall be coordinated with PJM Dispatch.</li> <li>4. All SVCs are absorbing reactive power.</li> <li>5. Generation Owners shall operate generators at the lower bandwidth of their voltage schedule when possible.</li> <li>6. Generation Owners shall communicate with PJM and the TO restrictions to their generator's ability to absorb MVARs if that capability varies from the existing "D" curve.</li> </ol> <p>Target: Distribution Companies/Transmission Owners/Generation</p>
09.09.2017 23:45	09.10.2017 12:35	<p>A High System Voltage has been issued; all companies shall take the following actions on the Bulk Electric System:</p> <ol style="list-style-type: none"> <li>1. All switchable capacitors are out of service.</li> <li>2. All reactors are in service.</li> <li>3. TOs are requested to review and adjust LTC settings as appropriate. All LTC (230 kV and above) and voltage schedule adjustments shall be coordinated with PJM Dispatch.</li> <li>4. All SVCs are absorbing reactive power.</li> <li>5. Generation Owners shall operate generators at the lower bandwidth of their voltage schedule when possible.</li> <li>6. Generation Owners shall communicate with PJM and the TO restrictions to their generator's ability to absorb MVARs if that capability varies from the existing "D" curve.</li> </ol> <p>Target: Distribution Companies/Transmission Owners/Generation</p>

**Manual Load Dump Warning** (0 Events)

**HLV Schedule Warning** (0 Events)

**HLV Schedule Action** (0 Events)

**Hot/Cold Weather Alert** (2 Events)

09.25.2017 07:00	09.25.2017 22:00	<p>A Hot Weather Alert has been issued from 07:00 on 09.25.2017 through 22:00 on 09.25.2017 Per M-13, members are expected to perform the following actions:  TRANSMISSION/GEN DISPATCHERS review plans to determine if any maintenance/testing, scheduled/being performed, on any monitoring, control, transmission/generating equipment can be deferred/canceled.</p>
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		<p>GENERATION DISPATCHERS:</p> <ul style="list-style-type: none"> <li>-- Review &amp; update unit parameters in Markets Gateway through the Hot Weather Alert period paying particular attention to accurate Start-up &amp; Notification, Min/Max Run Time, Eco Min/Max and Emergency Min/Max information.</li> <li>-- Submit alternate fuel capability &amp; alternate fuel restrictions via Markets Gateway.</li> <li>-- Review fuel supply/delivery schedules in anticipation of greater than normal operation of units.</li> <li>-- Provide PJM with estimate of time needed to return any unit on a Planned Outage. This 'Early Return Time' should be updated via eDART &amp; will not affect the Planned Outage est. end date.</li> <li>-- For dual fuel units, confirm the equipment is functional &amp; amount of alternate fuel available.</li> </ul> <p>Additional Comments: Forecasted temperature is (90 degrees for the Mid-Atlantic region, 89 degrees for the Southern Region, and 89 degrees for the COMED region). Forecasted THI is (80 degrees for the Mid-Atlantic region, 80 degrees for the Southern Region, and 79 degrees for the COMED region).</p>
<p>09.26.2017 07:00</p>	<p>09.26.2017 22:00</p>	<p>A Hot Weather Alert has been issued from 07:00 on 09.26.2017 through 22:00 on 09.26.2017 Per M-13, members are expected to perform the following actions:</p> <p>TRANSMISSION/GEN DISPATCHERS review plans to determine if any maintenance/testing, scheduled/being performed, on any monitoring, control, transmission/generating equipment can be deferred/canceled.</p> <p>GENERATION DISPATCHERS:</p> <ul style="list-style-type: none"> <li>-- Review &amp; update unit parameters in Markets Gateway through the Hot Weather Alert period paying particular attention to accurate Start-up &amp; Notification, Min/Max Run Time, Eco Min/Max and Emergency Min/Max information.</li> <li>-- Submit alternate fuel capability &amp; alternate fuel restrictions via Markets Gateway.</li> <li>-- Review fuel supply/delivery schedules in anticipation of greater than normal operation of units.</li> <li>-- Provide PJM with estimate of time needed to return any unit on a Planned Outage. This 'Early Return Time' should be updated via eDART &amp; will not affect the Planned Outage est. end date.</li> <li>-- For dual fuel units, confirm the equipment is functional &amp; amount of alternate fuel available.</li> </ul>

- Primary Reserve Warning** (0 Events)
- Voltage Reduction Warning** (0 Events)
- Voltage Reduction** (0 Events)
- Emergency Energy Request** (0 Events)

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**Max Emergency Gen Alert** (0 Events)

**Max Emergency Generation** (0 Events)

**Local Min Generation Event** (0 Events)

**Shared Reserve** (2 Events)

09.02.2017 00:36	09.02.2017 00:55	-142 MW with NYISO - Darlington Unit 1 - Regulation
09.06.2017 11:59	09.06.2017 12:15	-83 MW with NYISO - nine mile 1 - Regulation

**Min Gen Alert** (2 Events)

09.02.2017 20:20	09.03.2017 07:50	A Minimum Generation Alert has been issued for the Midnight of 09.03.2017 Expected generation level is within -1167 MW of normal minimum energy limits.
09.03.2017 21:00	09.04.2017 09:06	A Minimum Generation Alert has been issued for the Midnight of 09.04.2017 Expected generation level is within -1112 MW of normal minimum energy limits.

**Emergency Procedure** (5 Events)

09.07.2017 19:00	09.08.2017 02:00	A Geomagnetic Disturbance Warning has been issued for 19:21 on 09.07.2017 through 02:00 on 09.08.2017. A GMD warning of K7 or greater or greater is in effect for this period.
09.08.2017 01:47	09.08.2017 19:00	A Geomagnetic Disturbance Warning has been issued for 01:47 on 09.08.2017 through 19:00 on 09.08.2017 . A GMD warning of K7 or greater is in effect for this period. Additional Comments: SpaceWeatherPredictionCenter Extended original Warning of GMD Intensity of K7 or greater until 9/8/17 21:00 UTC (19:00 EDT).
09.08.2017 12:28	09.11.2017 08:21	A Minimum Generation Advisory is being issued for the valley periods 09.09.2017 through 09.11.2017. This advisory is being issued to provide advanced warning that due to mild weather and light loads, PJM may be entering into Min Gen Alerts and possibly Min Gen Actions during these periods. No action is required from the members at this time. This is an informational notice only. As we approach these valley periods, PJM will implement Min Gen Alerts/Actions on an as needed basis.

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09.28.2017 01:36	09.28.2017 05:00	A Geomagnetic Disturbance Warning has been issued for 01:36 on 09.28.2017 through 05:00 on 09.28.2017. A GMD warning of K-7 or greater is in effect for this period. Additional Comments: NOAA/SWPC has issue a warning that a Geomagnetic K-index of 7 or greater (G3 or greater) is expected valid from 9/28/07 05:36 UTC (01:36 EDT) until 09:00 UTC (05:00 EDT)
09.29.2017 09:17	10.02.2017 05:16	A Minimum Generation Advisory is being issued for the valley periods 09.30.2017 through 10.02.2017 . This advisory is being issued to provide advanced warning that due to mild weather and light loads, PJM may be entering into Min Gen Alerts and possibly Min Gen Actions during these periods. No action is required from the members at this time. This is an informational notice only. As we approach these valley periods, PJM will implement Min Gen Alerts/Actions on an as needed basis.

**PCLLRW** (35 Events)

09.12.2017 10:39	09.12.2017 21:36	A Post Contingency Local Load Relief Warning has been issued to maintain POLEYARD 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.12.2017 15:27	09.12.2017 17:19	A Post Contingency Local Load Relief Warning has been issued to maintain BELFAST 115 KV at 105.8 KV in the FE (ME) for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.13.2017 10:47	09.13.2017 16:21	A Post Contingency Local Load Relief Warning has been issued to maintain AUBURN5 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: Post Contingency Switching available - AEP will be able to put in Albion 138 kv cap in post-contingency.
09.20.2017 13:16	09.21.2017 21:01	A Post Contingency Local Load Relief Warning has been issued to maintain COREY 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.21.2017 12:55	09.22.2017 22:59	A Post Contingency Local Load Relief Warning has been issued to maintain BENTONHA-WESTSTRE at 242 MVA in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available

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09.21.2017 13:43	09.21.2017 15:21	A Post Contingency Local Load Relief Warning has been issued to maintain EWATERVT-WESTSTRE EAS-WES at 242 MVA in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.21.2017 13:47	09.21.2017 22:30	A Post Contingency Local Load Relief Warning has been issued to maintain SORENSON 2-P XFORMER at 804 MVA in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.21.2017 14:25	09.21.2017 17:38	A Post Contingency Local Load Relief Warning has been issued to maintain BUTL APS-SHANORMA KND-BT at 356 MVA in the APS for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.21.2017 14:30	09.21.2017 16:40	A Post Contingency Local Load Relief Warning has been issued to maintain MAPLEOE-JACKSNOE at 319 MVA in the ATSI for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.21.2017 14:38	09.21.2017 18:32	A Post Contingency Local Load Relief Warning has been issued to maintain BP_HUSKY-02FORTIN BPH-02F1 at 297 MVA in the ATSI for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.21.2017 14:42	09.21.2017 21:01	A Post Contingency Local Load Relief Warning has been issued to maintain SCOTTSVI-BREMO_VP at 173 MVA in the AEP for Transmission Contingency Control. Additional Comments: Post Contingency Switching available
09.21.2017 14:42	09.21.2017 15:10	A Post Contingency Local Load Relief Warning has been issued to maintain SCOTTSVI-BREMO_VP at 173 MVA in the AEP for Transmission Contingency Control. Additional Comments: Post Contingency Switching available
09.21.2017 15:01	09.21.2017 19:24	A Post Contingency Local Load Relief Warning has been issued to maintain 02ARMCO 138 KV at 127 KV in the ATSI for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.21.2017 20:50	09.22.2017 12:08	A Post Contingency Local Load Relief Warning has been issued to maintain EDANVILL-BANISTER at 319 MVA in the AEP for Transmission Contingency Control. Additional Comments: Post Contingency Switching available - Remove Smith Mountain pump(s) p/c

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09.22.2017 12:06	09.22.2017 15:35	A Post Contingency Local Load Relief Warning has been issued to maintain EDANVILL-BANISTER at 307 MVA in the AEP for Transmission Contingency Control. Additional Comments: Post Contingency Generation redispatch available
09.22.2017 13:05	09.22.2017 23:01	A Post Contingency Local Load Relief Warning has been issued to maintain COREY 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.22.2017 13:44	09.22.2017 15:35	A Post Contingency Local Load Relief Warning has been issued to maintain SCOTTSVI-BREMO_VP at 173 MVA in the AEP for Transmission Contingency Control. Additional Comments: Post Contingency Generation redispatch available
09.22.2017 13:57	09.22.2017 15:33	A Post Contingency Local Load Relief Warning has been issued to maintain 02FOWLES-PLSNTVLY at 129 MVA in the ATSI for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.22.2017 20:22	09.22.2017 23:00	A Post Contingency Local Load Relief Warning has been issued to maintain EDANVILL-BANISTER at 319 MVA in the AEP for Transmission Contingency Control. Additional Comments: Post Contingency Generation redispatch available
09.23.2017 16:16	09.23.2017 23:36	A Post Contingency Local Load Relief Warning has been issued to maintain COREY 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: Post Contingency Switching available
09.25.2017 11:21	09.26.2017 10:22	A Post Contingency Local Load Relief Warning has been issued to maintain COREY 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: Post Contingency Switching available
09.25.2017 12:54	09.25.2017 23:19	A Post Contingency Local Load Relief Warning has been issued to maintain STURGIS 69 KV at 63.5 KV in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.25.2017 13:51	09.25.2017 23:19	A Post Contingency Local Load Relief Warning has been issued to maintain BENTONHA-WESTSTRE at 242 MVA in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available



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09.26.2017 13:42	09.26.2017 22:06	A Post Contingency Local Load Relief Warning has been issued to maintain BENTONHA-WESTSTRE at 242 MVA in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.26.2017 13:51	09.26.2017 14:25	A Post Contingency Local Load Relief Warning has been issued to maintain MCDOWLOE 138 KV at 127 KV in the ATSI for Transmission Contingency Control. Additional Comments: Post Contingency Switching available
09.26.2017 15:31	09.26.2017 21:35	A Post Contingency Local Load Relief Warning has been issued to maintain EWOOSTER-CLOVEROE TIE at 190 MVA in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.26.2017 15:37	09.26.2017 20:00	A Post Contingency Local Load Relief Warning has been issued to maintain BRADYLAK 138 KV at 127 KV in the ATSI for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.26.2017 18:03	09.27.2017 23:34	A Post Contingency Local Load Relief Warning has been issued to maintain COREY 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.27.2017 13:55	09.27.2017 19:55	A Post Contingency Local Load Relief Warning has been issued to maintain BRADYLAK 138 KV at 127 KV in the ATSI for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.27.2017 14:34	09.27.2017 23:34	A Post Contingency Local Load Relief Warning has been issued to maintain HEATH-WMILLERS at 205 MVA in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.28.2017 12:18	09.28.2017 12:34	A Post Contingency Local Load Relief Warning has been issued to maintain CARTANZA AT2 XFORMER at 200 MVA in the DPL (Delmarva) for Transmission Contingency Control. Additional Comments: Generation - called late
09.28.2017 13:42	09.28.2017 14:16	A Post Contingency Local Load Relief Warning has been issued to maintain CARTANZA AT1 XFORMER at 200 MVA in the DPL (Delmarva) for Transmission Contingency Control. Additional Comments: Generation - slow response

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09.28.2017 14:49	09.28.2017 15:06	A Post Contingency Local Load Relief Warning has been issued to maintain LYNBROOK 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.28.2017 23:17	09.29.2017 05:21	A Post Contingency Local Load Relief Warning has been issued to maintain COREY 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: Post Contingency Switching available

**Non-PCLLRW** (8 Events)

09.12.2017 10:07	09.12.2017 10:58	A Non-Market Post Contingency Local Load Relief Warn has been issued to maintain RANDOLPH 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.18.2017 12:24	09.22.2017 23:01	A Non-Market Post Contingency Local Load Relief Warn has been issued to maintain SHEFFIEL 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.18.2017 12:41	09.18.2017 22:31	A Non-Market Post Contingency Local Load Relief Warn has been issued to maintain BIGBONE 69 KV at 63.5 KV in the EKPC for Transmission Contingency Control. Additional Comments: Post Contingency Switching available
09.20.2017 13:56	09.20.2017 19:05	A Non-Market Post Contingency Local Load Relief Warn has been issued to maintain BIGBONE 69 KV at 63.5 KV in the EKPC for Transmission Contingency Control. Additional Comments: Post Contingency Switching available
09.21.2017 11:17	09.21.2017 21:02	A Non-Market Post Contingency Local Load Relief Warn has been issued to maintain SCIOTOTR 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: Post Contingency Switching available
09.22.2017 12:55	09.22.2017 15:36	A Non-Market Post Contingency Local Load Relief Warn has been issued to maintain BLUFFPOI 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available
09.25.2017 13:47	09.25.2017 21:12	A Non-Market Post Contingency Local Load Relief Warn has been issued to maintain EWOOSTER 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available

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09.25.2017 16:16	09.25.2017 21:11	A Non-Market Post Contingency Local Load Relief Warn has been issued to maintain HYDRAMAT 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: BES 2 Facility
09.26.2017 15:18	09.26.2017 21:35	A Non-Market Post Contingency Local Load Relief Warn has been issued to maintain EWOOSTER 138 KV at 127 KV in the AEP for Transmission Contingency Control. Additional Comments: BES 2 Facility